



# Innovation Network for Fusion Energy (INFUSE) Program Overview

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<https://infuse.ornl.gov/>

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**Overview**  
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- **INFUSE program is a Public-Private Partnership (P3) Program started by FES with a Pilot Program in FY 2019**
  - *This is first of a kind P3 program within the Office of Science*
- **Leverages the many unique and important capabilities that are located at DOE National Laboratories**
- **Streamlined approach for companies to access DOE Laboratory Capabilities.**
- **INFUSE Program is modeled after other successful DOE P3 programs, most notably the Gateway for Accelerated Innovation in Nuclear (GAIN) Nuclear Energy Voucher program established by the DOE Office of Nuclear Energy (NE)**
- **The Request for Assistance (RFA) Calls are managed by a consortium of FES funded laboratories, led by ORNL and PPPL.**

The DOE national laboratories possess expertise and capabilities in fusion research spanning over five decades of development. Currently, **ten DOE laboratories** participate in the INFUSE program. You may find their capabilities and contact information in the links below.

Laboratory	Point of Contact	Email
<a href="#">Brookhaven National Laboratory (BNL)</a>	Ramesh Gupta	<a href="mailto:gupta@bnl.gov">gupta@bnl.gov</a>
<a href="#">Idaho National Laboratory (INL)</a>	Paul Humrickhouse	<a href="mailto:paul.humrickhouse@inl.gov">paul.humrickhouse@inl.gov</a>
<a href="#">Lawrence Berkeley National Laboratory (LBNL)</a>	Steve Gourlay	<a href="mailto:sagourlay@lbl.gov">sagourlay@lbl.gov</a>
<a href="#">Lawrence Livermore National Laboratory (LLNL)</a>	Andris Dimits	<a href="mailto:dimits1@llnl.gov">dimits1@llnl.gov</a>
<a href="#">Los Alamos National Laboratory (LANL)</a>	Glen Wurden	<a href="mailto:wurden@lanl.gov">wurden@lanl.gov</a>
<a href="#">Oak Ridge National Laboratory (ORNL)</a>	Dennis Youchison*	<a href="mailto:youchisondl@ornl.gov">youchisondl@ornl.gov</a>
<a href="#">Pacific Northwest National Laboratory (PNNL)</a>	Wahyu Setyawan	<a href="mailto:wahyu.setyawan@pnnl.gov">wahyu.setyawan@pnnl.gov</a>
<a href="#">Princeton Plasma Physics Laboratory (PPPL)</a>	Ahmed Diallo**	<a href="mailto:adiallo@pppl.gov">adiallo@pppl.gov</a>
<a href="#">Sandia National Laboratories (SNL)</a>	Rob Kolasinski	<a href="mailto:rkolasi@sandia.gov">rkolasi@sandia.gov</a>
<a href="#">Savannah River National Laboratory (SRNL)</a>	Jim Klein	<a href="mailto:james.klein@srnl.doe.gov">james.klein@srnl.doe.gov</a>

## Current Topical Areas:

- Enabling Technologies
- Materials Science
- Plasma Diagnostics
- Theory and Simulation
- Experimental Capabilities

INFUSE Director



INFUSE Deputy Director



# Request for Assistance (RFA) Details 1

## Scope

- Funding goes directly to a DOE laboratory to perform a scope of work in support of the requesting company
- Focused on research necessary for the company fusion goals, not commercialization
- Focused on *unique* capabilities at DOE laboratories, not items readily available elsewhere
- A single institution may submit up to five RFA's to a single RFA call (NEW)

## Budget and Schedule

- Majority of requests are for single year awards with a value of between \$50k - \$250k
- In special cases, applicants may request up to \$500k in total value with a duration of up to two years (NEW)
- 20 percent cost share is required, which can be cash, equipment, or in-kind contributions

## Company Certification

- Requestors must certify that they will accept one of the two standardized Cooperative Research and Development Agreements (CRADAs)
- Requestors must certify that they will provide the required 20 percent upon selection for a partnership award

# Request for Assistance (RFA) Details 2

## **Eligible Requester**

- U.S. based private entity with U.S. ownership
- U.S. based private entity with foreign ownership so long as that entity's participation is in the economic interest of the U.S. (NEW)

## **RFA Execution Requirements**

- All work under an INFUSE award must be performed in the U.S.
- Products embodying intellectual property developed under the assistance must be substantially manufactured in the U.S.
- The transfer of technology and data resulting from INFUSE awards are subject to U.S. export control laws.

## **Merit Review**

- The Review Process is organized by the INFUSE Team at ORNL/PPPL, with input provided to FES for final selection
- RFA applications are evaluated and competitively selected in accordance with the Office of Science Review Criteria
- Reviewers are asked to comment on the value of the work from the company perspective

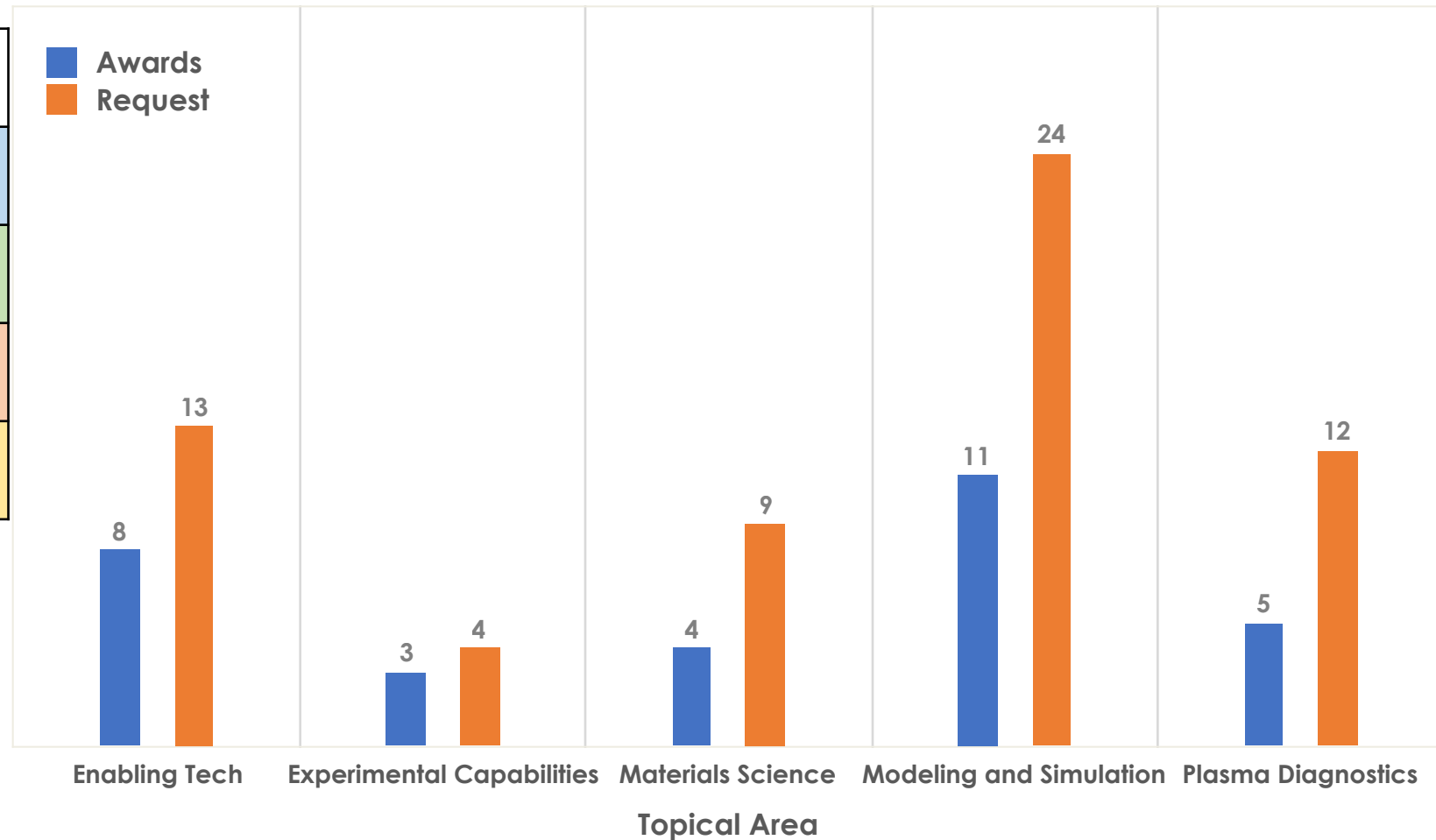
**More details available:** <https://infuse.ornl.gov/rfa-announcement-and-submission/>

**Award Abstracts:** <https://infuse.ornl.gov/?s=abstract&filter=&ls=>

# Request Details (Continued)

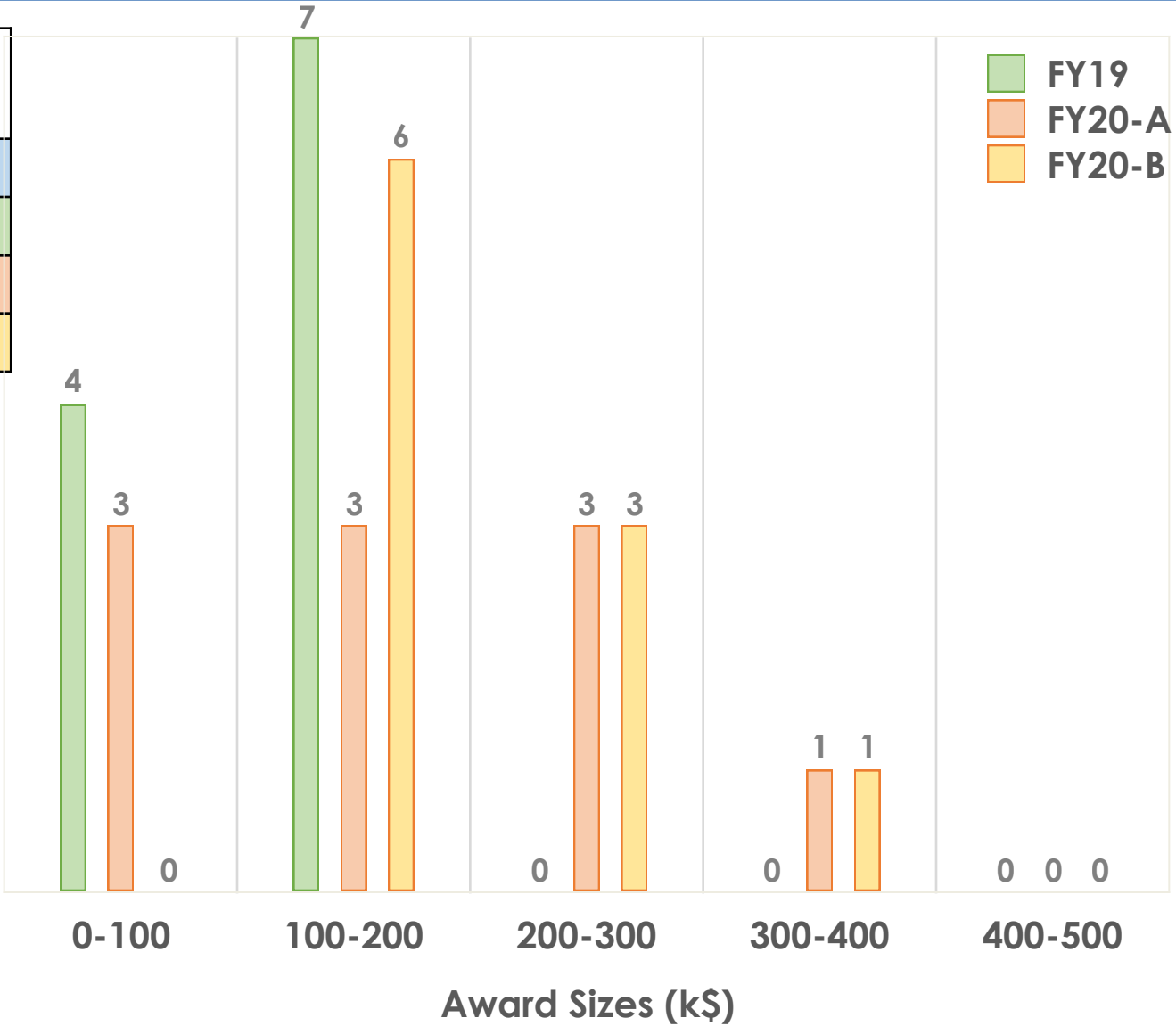
	Requests	Awards	Rate
All RFA's	62	31	50%
FY19	21	11	52%
FY20-A	25	10	40%
FY20-B	16	10	63%

- FY19 RFA Call included restriction of one request per topical area



	Total Requested	Total Awarded	Average Size
All RFA's	\$10,777 K	\$5,642	\$177
FY19	\$2,870	\$1,543	\$137
FY20-A	\$4,481	\$1,949	\$179
FY20-B	\$3,426	\$2,150	\$214

- FY20 RFA Calls increased the funding level to \$500k total





## ARPA-E funded multiple diagnostics teams to provide the necessary data for quantifying the fusion metrics

- INFUSE program will leverage these multiple diagnostics teams when company request specific diagnostics
- INFUSE can only consider the teams with DoE lab as being lead in the proposal (*until an arrangement is obtained for universities*)
- The goal should be to use the data to validate a concept and/or meet the well defined company milestones
  - *INFUSE diagnostic awards should NOT be considered for service*
- INFUSE will plan to fund the diagnostics team for the implementation, operation, and analysis of the data
- Integration for the installation of the diagnostics should be entirely covered by the company.

## **FES and the INFUSE Team are continuing to evaluate the INFUSE Program moving forward to ensure success**

- First round of submission for 2021 deadline is 5:00 pm EST March 12, 2021
- Two INFUSE Workshops have been held to help bring the labs and private industry together as well as to provide feedback on room for improvement
  - FY21 Workshop was cohosted by FES, the Electric Power Research Institute (EPRI), and the Fusion Industry Association (FIA)
  - Included over 195 Participants from private companies, DOE laboratories, universities, international organizations and utilities
- FES is considering additional modifications to meeting company needs
- FES is actively exploring other opportunities for more readily engaging private industry